WHAT IS CLAIMED IS:

1. An apparatus for manufacturing a glass base material which is an parent material of an optical fiber, comprising:

a tank which contains a raw material of said glass base material to vaporize said raw material to generate a raw material in gas phase;

a temperature control unit which controls a temperature of said raw material; and

a pressure control unit which controls a pressure of said raw material in gas phase.

2. An apparatus as claimed in claim 1, wherein said tank includes:

a gas phase region which contains said raw material in gas phase; and

a liquid phase region which contains said raw material in liquid phase.

3. An apparatus as claimed in claim 2, wherein said temperature control unit and said pressure control unit control a partial pressure of said raw material in gas phase in said gas phase region by controlling an equilibrium vapor pressure in said gas phase region and said liquid phase region.

4. An apparatus as claimed in claim 3, wherein said pressure control unit has a carrier gas supply unit, which supplies a carrier gas for controlling said equilibrium vapor pressure, by bubbling said carrier gas through said liquid phase region.

5. An apparatus as claimed in claim 4, wherein said carrier gas supply unit has a carrier gas cylinder which supplies said carrier gas to said carrier gas supply unit.

6. An apparatus as claimed in claim 1, further comprising at

least one reaction vessel where said raw material in gas phase is supplied and said glass base material is formed by hydrolyzing said raw material in gas-phase.

7. An apparatus as claimed in claim 6, further comprising a gas material supply valve that controls a flow rate of said raw material in gas phase from said tank to said reaction vessel.

8. An apparatus as claimed in claim 6, further comprising a filter which filters said raw material in gas phase supplied to said reaction vessel.

9. An apparatus as claimed in claim 8, wherein said filter is formed by a membrane that has a transmitting hole for filtering said raw material in gas phase.

10. An apparatus as claimed in claim 9, wherein a diameter of said transmitting hole is substantially from 0.1 μm to 100 μm.

11. An apparatus as claimed in claim 9, wherein said membrane is made of a politetrafluoroethylene.

12. An apparatus as claimed in claim 9, wherein said membrane is made of a stainless sinter.

13. An apparatus as claimed in claim 9, wherein said membrane is made of a stainless fiber.

14. An apparatus as claimed in claim 9, wherein said membrane is made of a ceramic filter.

15. An apparatus as claimed in claim 9, wherein said filter has a plurality of layers of said membranes.

16. An apparatus as claimed in claim 6, wherein said reaction vessel has a cooling unit which cools said reaction vessel, and said cooling unit circulates cooling water which contains an anticorrosive chemical inside said cooling unit.

17. An apparatus as claimed in claim 16, wherein said anticorrosive chemical includes policarboxylic acid nitrite.

18. An apparatus as claimed in claim 17, wherein said cooling water contains said policarboxylic acid nitrite at a concentration from 1 ppm to 10 ppm.

19. An apparatus as claimed in claim 15, wherein said anticorrosive chemical further includes inorganic nitride.

20. An apparatus as claimed in claim 19, wherein said cooling water contains each of said policarboxylic acid nitrite and inorganic nitride at a concentration from 1 ppm to 10 ppm.

21. An apparatus as claimed in claim 16, wherein a temperature of said cooling water is substantially from 40°C to 90°C.

22. An apparatus as claimed in claim 21, wherein said temperature of said cooling water is substantially from 50°C to 80°C.

23. An apparatus as claimed in claim 16, wherein said cooling water contains an antiblastic agent that suppresses an increase of bacteria.

24. A method for manufacturing a glass base material, comprising:

providing a raw material of said glass base material,

heating said raw material to vaporize said raw material and

generate a raw material in gas phase,

supplying a carrier gas to reduce a partial pressure of said raw material in gas phase to vaporize said raw material,

controlling a temperature of said raw material by adjusting said heating of said raw material, and

controlling said partial pressure of said raw material in gas phase by adjusting said supply of said carrier gas.

25. A method as claimed in claim 24, further comprising; supplying and hydrolyzing said raw material in gas phase to form said glass base material.

26. A method as claimed in claim 25, further comprising; filtering said raw material in gas phase and said supplying and hydrolyzing of said filtered raw material in gas phase.

27. A method as claimed in claim 25, further comprising; controlling a flow rate of said raw material in gas phase and said supplying and hydrolyzing of said flow rate controlled raw material in gas phase.

28. A method as claimed in claim 24, wherein said supplying and hydrolyzing of said raw material in a gas phase hydrolyzes said raw material in a gas phase in a reaction vessel; and

said hydrolyzing includes cooling said reaction vessel by circulating cooling water around said reaction vessel.

29. A method as claimed in claim 28, wherein said cooling cools said reaction vessel with cooling water which contains anticorrosive chemicals.

30. A method as claimed in claim 29, wherein said anticorrosive chemicals include policarboxylic acid nitrite.

31. A method as claimed in claim 30, wherein said cooling water contains said policarboxylic acid nitrite at a concentration substantially from 1 ppm to 10 ppm.

32. A method as claimed in claim 29, wherein said anticorrosive chemical further includes inorganic nitride.

33. A method as claimed in claim 32, wherein said cooling water contains ~~said inorganic nitride at a concentration~~ substantially from 1 ppm to 10 ppm.

34. A method as claimed in claim 29, wherein said cooling regulates a temperature of said cooling water substantially from 40°C to 90°C.

35. A method as claimed in claim 34, wherein said cooling regulates said temperature of said cooling water substantially from 50°C to 80°C.

36. A method as claimed in claim 29, wherein said cooling water contains an antiblastic agent that suppresses an increase of bacteria in said cooling water.